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22 April 1957

GEOGRAPHIC RESEARCH AREA

Material for I. Introductory Statement

A. It might be fairly stated that this government's interest in identifying those elements of unclassified information on the United States whose control might be advisable stemmed from the grave difficulties encountered by our intelligence agencies in securing basic facts on the USSR. Though the unavailability of information on the USSR is not wholly the result of top policy decision, it provides a good example of how well foreign intelligence interests can be frustrated by denying them information that normally is unclassified. The United States thus feels pressure in this matter primarily in response to the great contrast in the intelligence advantages enjoyed by each.

The CIA has had a keen interest in this problem as it relates to geodetic and gravimetric data -- information which is of key importance in the development of accuracy in mapping, missile systems, and certain aspects of satellite research -- and has informally joined other agencies in studying the feasibility of instituting a policy of quid pro quo exchange in this field. The problem of maps and charts, per se, was examined by a

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Task Force of the Interdepartmental Advisory Committee on Publications (IACP) on 13 April 1956. The problem of gravimetric and geodetic data was reviewed by a working group of U.S. defense mapping agencies in November 1956, and is of direct interest to an ad hoc working group of IAC agencies concerned with intelligence aspects of the IGY.

B. With the exception of specifically classified maps and aerial photography, all geographical data and publications on the United States are freely available to the USSR or procurable without much difficulty. Army Map Service maps larger than the scale of 1:500,000 are restricted to the extent that they require special request. However, all such maps as well as unclassified geographical publications are obtainable by the Russians through one device or another.

In contrast, a considerable amount of Russian geographical materials are specifically denied or unavailable to the United States. The recent increase in "take" does not apply to aerial photography, topographic and special-subject mapping, or geodetic and gravimetric data; these in the USSR are classified materials. The increase in availability of other geographic subjects is very limited, and reflects improvement in the simple mechanics of publishing rather than the removal of earlier restrictions. Detailed studies which in the United States represent unclassified monographs or doctoral theses are mostly limited in the USSR to subjects according with State planning and thus continue to be automatically classified.

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C. Except for relatively rare instances, U.S. geographical materials are subject to little or no pre-publication control. On the other hand, Soviet materials are, wherever possible, subject to effective pre-publication screening and control through long-developed regulations and control mechanisms. Dissemination of certain non-published materials is restricted to official use by a rigid accounting and transmittal system.

Published geodetic data and large-scale maps and charts are excluded from exchange by the USSR through (1) export controls, (2) screening of sales to Soviet non-nationals at retail centers, and (3) written pre-purchase application requiring full identification of purchasers and a justification for such purchase request. The completely uncontrolled availability of U.S. geodetic data and cartographic products prior to World War II and the known Soviet collection of these, means that a substantial, vital amount is now held by the USSR. U.S. data have been utilized in the determination of the Soviet ellipsoid of reference in the Soviet geodetic system, but Soviet geodetic data are not available to the U.S. Army Map Service in its requirement for a similar improved ellipsoid of reference.

D. Seventy-five percent of U.S. geographic intelligence on the USSR is obtained from open sources. Guidebooks, telephone directories, atlases, and encyclopedias together make it possible to develop studies of moderate accuracy and detail. Unclassified technological information in the fields of geodesy,

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gravimetry, and photographic instrumentation is of considerable interest to us, but its value is limited by its very limited availability.

Soviet intelligence can apply a low priority to the collection of background data because it enjoys free access to a multitude of corroborative sources whose results provide, as often as not, the ultimate synthesis and evaluation that is required. There is clear evidence, however, of priority effort by the Russians to obtain such hardware as the Worden Gravimeter and associated technical books in the fields of mapping, geophysics, and photogrammetry. The Soviets have developed an elaborate abstracting service which systematically examines all U.S. and other free-world geodetic literature (Journal of the Coast and Geodetic Survey, Surveying and Mapping, the Military Engineer, etc.).

As far back as the 1930's, the Soviets already had a large map collection containing U.S. maps. Analyses of a recent Soviet world atlas reveals a careful and detailed use of topographic maps, aeronautical charts, city plans and road maps. The USSR constantly collects information, which is openly procurable, on U.S. foreign aid plans which incorporate aerial photo coverage and topographic map production, particularly of countries adjacent to the Soviet Bloc.

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ATTACHMENT: IA

SUMMARY

In November 1956, the CIA chaired a meeting of representatives from Air Technical Intelligence Center, U. S. Hydrographic Office, Aeronautical Chart and Information Center, and the Air Force Cambridge Research Center to review U. S. defense interests in the sharing of geodetic and gravimetric data with unfriendly countries that may develop in connection with the International Geophysical Year and continue thereafter. The group concluded that these data must be considered as having military value--in some cases, a value of considerable strategic importance. U. S. security is menaced because the USSR has access to U. S. data but does not share its own. It was agreed that further meetings should be held to explore techniques of denial that would limit USSR advantages in the field.

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B. The Post-Symposium Meeting

25X1A2g 1. The meeting, chaired by the undersigned, was convened at [REDACTED] 25X1A2g
[REDACTED] headquarters in Columbus and included representatives from ATIC
(AFOIN 4E4), [REDACTED], USN Hydrographic Office, Aeronautical Chart
25X1A2g and Information Center, and the Air Force Cambridge Research Center.

2. Against the backdrop of a Symposium plea for more of the data needed for an unclassified (USAF-financed) World Gravity Program, the meeting was opened by the undersigned with a brief intelligence summary of Soviet progress and achievements in geodesy and, more particularly, in gravimetry. Some evidence was presented to illustrate the scheming on the part of the Soviet Union to increase international gravity surveys during the IGY while carefully avoiding any similar increase in Soviet domestic activity. Moreover, the recent explicit Soviet refusal to declassify and disseminate gravity data was not only in marked contrast with the traditional Western policy of sharing such data, but it also underscored the Soviet intention of maintaining the

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inequity resulting from Soviet intransigence. Since gravity surveys may be stimulated by the IGY, it was necessary to explore the problems of (1) whether US gravity data are to be freely disseminated and (2) what complications might arise from a US violation of the spirit of free exchange of IGY data in the event of a US refusal to release gravity data.

3. The discussion revealed a strong common concern to forestall an indiscriminate dissemination of gravimetric data. The following conclusions evolved as the consensus of the group.

- a. Gravity data must be considered as having military value.
- b. Gravity and geodetic data over broad areas can be secured only through costly, time-consuming surveys in the field. In this aspect, field data in general differ from data secured by laboratory research; they are not subject to concurrent duplication. The withholding of field data is an effective means of denying advantages to unfriendly countries.
- c. The US government, which finances most gravity surveys, must consider carefully what data might be released and what data could be obtained in exchange.
- d. The IGY program includes two types of gravity data that must be shared: (1) time-recorded observations for earth-tide studies, and (2) such gravity data for the Antarctic as are required in the glaciology studies for determining the thickness of the ice. The former have no military significance. The latter, however, should either be incorporated into finished glaciology studies that would not mean divulging of the actual gravity values, or they should be presented as raw data in uncorrected form (i.e. gravity observations without elevations).
- e. Although the group agreed that US gravity survey data should not be included in the exchange of IGY data, this posed a dilemma for the Air Force gravity project at the Ohio State University, which depends upon contributions of data from all parts of the world. Because of this situation, OSU is obligated to make its results openly available to all contributors of data. (The Air Force Cambridge Research Center asked for guidance in resolving the dilemma. The solution of this difficult problem will require special consideration in a series of future meetings).
- f. The Air Force representative sought guidance again on how Woollard's data might be screened to make them useless to the USSR for geodetic purposes. The Air Force will also keep the group advised of Woollard's plans for a trip to the Soviet Union so that it can provide collection guidance. This phase of activity will require additional future discussions by the group.

g. The indiscriminate sharing of all results and data of the US Naval Observatory project on lunar photography may make possible a geodetic bridging of continents that would be unwise from the standpoint of US defense considerations. Therefore, efforts should be made to limit the dissemination to (1) raw lunar photographs or (2) to summaries giving only the end results on the variations in the rotation of the earth.

h. The group concluded that the geodetic data obtained by the Army Map Service in its completion of the 30th meridian arc in Africa was of military importance. Efforts should be made to protect the observational data from falling into Soviet hands, but this may not be easy since certain data have already been given to the countries in which the field work was undertaken.

i. The group concurred in US Navy plans not to release any submarine gravity data.

j. Attempts should be made to establish a cutoff date after which geodetic data on the US artificial earth satellite would cease to be considered a part of the IGY program and, therefore, will not be subject to public release.

k. In view of the complexity of the problems reviewed by the group, which could not possibly be resolved in one meeting, it was agreed that future meetings would be required. Moreover, it was agreed that efforts should be made to formalize future group meetings, possibly by creating a working group under the Guided Missiles Intelligence Committee of the IAC.

III. Recommendations

It is recommended that the group be given authorization to (1) initiate additional informal meetings to follow through on the outstanding problems, and (2) explore the possibilities of formalizing a working group under the GMIC.


Chief, Staff on Soviet Mapping Intelligence

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SUMMARY

In April 1956, CIA participated in a meeting of a Task Force of the Interdepartmental Advisory Committee on Publications (IACP), which had been appointed to study security problems connected with the publication of maps and charts. Other participants represented the U. S. Geological Survey, Forest Service, Joint Chiefs of Staff - PSS, Office of Strategic Information, and the Coast and Geodetic Survey. The meeting concluded that the official publishing agencies are doing everything possible to protect strategic information in the publication of maps and charts short of imposing a security classification on maps and charts.

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Geodetic data and large-scale maps and charts are unique by their absolute dependence on complex, systematic and direct field observations obtained on site at a multiplicity of points. Such data cannot be obtained indirectly through statistical projection or extrapolation procedures. There is no substitute for direct observational data, maps and charts. Nevertheless, Soviet open-source geodetic literature is vital to the U. S. for (1) indications of progress in surveying and mapping to improve Soviet military (including guided missiles) offensive and defensive capabilities (2) indicators of possible trends in Soviet military planning evidenced through basic surveying and topographic mapping. The Soviet Union, by virtue of its unique large extent has been forced to develop superior geodetic adjustment techniques over large areas which can uniquely benefit the long-range requirements for ballistic missiles. Information on this Soviet advantage is not only of intelligence but also of technical value.

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GEOGRAPHIC RESEARCH AREA

On 12 October 1955, the Task Force on Aerial Photography of the Intergovernmental Advisory Committee on Publications reported on its survey of security aspects of the publication and dissemination of aerial photography. It concluded that:

- a. Aerial photographs sold by industry should ^{carry} be an educational stamp requesting discretion in publication and release of the material.
- b. Industry should report to the Office of Strategic Information on all sales to questionable sources.
- c. A policy statement should be sent to all Federal agencies in the hope of preventing unwarranted publication of aerial photographs containing strategic information.
- d. The Committee on Publications should explore with the Department of Defense the possibility of speeding up the process of classification and declassification of photographs and the notifications of such actions.
- e. Executive Order 10104, relating to unauthorized release of information, be rewritten and clarified. TH No formal response to the recommendations was undertaken, largely because the Department of Defense could not devise effective machinery for implementation of the control. However, some voluntary tightening up was accomplished both in and outside the government.

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